

WHAT IS CLAIMED IS:

1. A radio reception apparatus, comprising:
a plurality of antennas;

RF reception units provided corresponding to each antenna and
performing amplification and frequency conversion of signals received at
each antenna;

an adaptive array operational processing unit performing adaptive
array operational processing on signals output from the plurality of RF
reception units; and

a control unit; wherein

said control unit selects from a first mode in which adaptive array
processing is performed and a second mode in which adaptive array
processing is not performed, in accordance with a prescribed condition,

when said first mode is selected, said control unit performs first
control to operate said plurality of RF reception units and said adaptive
array operational processing unit, and

when said second mode is selected, said control unit performs
second control so that one RF reception unit is selected as a first RF
reception unit to operate and an operation of an RF reception unit other
than said first RF reception unit and said adaptive array operational
processing unit is stopped.

2. The radio reception apparatus according to claim 1, wherein
said each RF reception unit further detects a level of a reception
signal received at a corresponding antenna and outputs the detected
reception signal level to said control unit, and

said control unit selects said first mode when a difference between a
highest level and a lowest level among said detected reception signal levels
is equal to or lower than a prescribed value, and selects said second mode
when the difference between the highest level and the lowest level is larger
than said prescribed value.

3. The radio reception apparatus according to claim 1, wherein said each RF reception unit further detects a level of a reception signal received at a corresponding antenna and outputs the detected reception signal level to said control unit, and

5 said control unit selects said first mode when all reception signal levels of said detected reception signal levels are lower than a prescribed value, and selects said second mode when a level of at least one reception signal is equal to or higher than said prescribed value.

4. The radio reception apparatus according to claim 1, further comprising a demodulation unit demodulating a signal processed by said adaptive array operational processing unit while said first mode is selected, and a communication quality calculating unit calculating communication quality based on said demodulated signal, wherein

5 while said first mode is selected, said control unit maintains said first mode when communication quality is not higher than prescribed quality, and selects said second mode when said communication quality is higher than the prescribed quality.

5. The radio reception apparatus according to claim 1, further comprising a demodulation unit demodulating a signal processed by said first RF reception unit and not processed by said adaptive array operational processing unit while said second mode is selected, and a communication quality calculating unit calculating communication quality based on said demodulated signal, wherein

5 while said second mode is selected, said control unit selects said first mode when communication quality is not higher than prescribed quality, and maintains said second mode when said communication quality is higher than the prescribed quality.

6. The radio reception apparatus according to claim 1, further comprising an input portion through which selection from said first mode and said second mode is input by user manipulation, wherein

5 said control unit selects said first mode when selection of said first mode is input through said input portion and selects said second mode when selection of said second mode is input through the same.

7. The radio reception apparatus according to claim 1, wherein said each RF reception unit further detects a level of a reception signal received at a corresponding antenna and outputs the detected reception signal level to said control unit, and
5 said control unit selects as a first RF reception unit, an RF reception unit that has output a level highest among said detected reception signal levels when said second mode is selected.

8. The radio reception apparatus according to claim 1, wherein said control unit selects a predetermined RF reception unit as a first RF reception unit when said second mode is selected.

9. A method of controlling adaptive array processing in a radio reception apparatus which includes a plurality of antennas, RF reception units provided corresponding to each antenna and performing amplification and frequency conversion of signals received at each antenna, and an
5 adaptive array operational processing unit performing adaptive array operational processing on signals output from the plurality of RF reception units, comprising the steps of:
 selecting from a first mode in which adaptive array processing is performed and a second mode in which adaptive array processing is not
10 performed, in accordance with a prescribed condition; and
 performing control in which, when said first mode is selected, first control is performed to operate said plurality of RF reception units and said adaptive array operational processing unit, and when said second mode is selected, second control is performed so that one RF reception unit is
15 selected as a first RF reception unit to operate and an operation of an RF reception unit other than said first RF reception unit and said adaptive array operational processing unit is stopped.

10. The method of controlling adaptive array processing according to claim 9, further comprising the step of detecting a level of a reception signal received at a corresponding antenna, wherein

5 in said step of selecting, said first mode is selected when a difference between a highest level and a lowest level among said detected reception signal levels is equal to or lower than a prescribed value, and said second mode is selected when the difference between the highest level and the lowest level is larger than said prescribed value.

11. The method of controlling adaptive array processing according to claim 9, further comprising the step of detecting a level of a reception signal received at a corresponding antenna, wherein

5 in said step of selecting, said first mode is selected when all reception signal levels of said detected reception signal levels are lower than a prescribed value, and

said second mode is selected when a level of at least one reception signal is equal to or higher than said prescribed value.

12. The method of controlling adaptive array processing according to claim 9, further comprising the steps of demodulating a signal processed by said adaptive array operational processing unit when said first mode is selected, and calculating communication quality based on said demodulated signal, wherein

5 in said step of selecting, while said first mode is selected, said first mode is maintained when communication quality is not higher than prescribed quality, and said second mode is selected when said communication quality is higher than the prescribed quality.

13. The method of controlling adaptive array processing according to claim 9, further comprising the steps of demodulating a signal processed by said first RF reception unit and not processed by said adaptive array operational processing unit while said second mode is selected, and

5 calculating communication quality based on said demodulated signal,

wherein

10 in said step of selecting, while said second mode is selected, said first mode is selected when communication quality is not higher than prescribed quality, and said second mode is maintained when said communication quality is higher than the prescribed quality.

14. The method of controlling adaptive array processing according to claim 9, further comprising the step of inputting selection from said first mode and said second mode by user manipulation, wherein

5 in said step of selecting, said first mode is selected when selection of said first mode is input and said second mode is selected when selection of said second mode is input.

15. The method of controlling adaptive array processing according to claim 9, further comprising the step of detecting a level of a reception signal received at a corresponding antenna, wherein

5 in said step of controlling, when said second mode is selected, an RF reception unit that has output a level highest among said detected reception signal levels is selected as a first RF reception unit.

16. The method of controlling adaptive array processing according to claim 9, wherein

 in said controlling step, a predetermined RF reception unit is selected as a first RF reception unit when said second mode is selected.

5 17. A program for controlling adaptive array processing in a radio reception apparatus which includes a plurality of antennas, RF reception units provided corresponding to each antenna and performing amplification and frequency conversion of signals received at each antenna, and an adaptive array operational processing unit performing adaptive array operational processing on signals output from the plurality of RF reception units, causing a computer to execute the steps of:

 selecting from a first mode in which adaptive array processing is

performed and a second mode in which adaptive array processing is not
10 performed, in accordance with a prescribed condition; and
performing control in which, when said first mode is selected, first
control is performed to operate said plurality of RF reception units and said
adaptive array operational processing unit, and when said second mode is
15 selected, second control is performed so that one RF reception unit is
selected as a first RF reception unit to operate and an operation of an RF
reception unit other than said first RF reception unit and said adaptive
array operational processing unit is stopped.

18. The program for controlling adaptive array processing
according to claim 17, wherein

said RF reception unit further detects a level of a reception signal
received at a corresponding antenna,

5 in said step of selecting, said first mode is selected when a
difference between a highest level and a lowest level among said detected
reception signal levels is equal to or lower than a prescribed value, and

said second mode is selected when the difference between the
highest level and the lowest level is larger than said prescribed value.

19. The program for controlling adaptive array processing
according to claim 17, wherein

said RF reception unit further detects a level of a reception signal
received at a corresponding antenna,

5 in said step of selecting, said first mode is selected when all
reception signal levels of said detected reception signal levels are lower
than a prescribed value, and

said second mode is selected when a level of at least one reception
signal is equal to or higher than said prescribed value.

20. The program for controlling adaptive array processing
according to claim 17, further causes a computer to execute the steps of
demodulating a signal processed by said adaptive array operational

5 processing unit when said first mode is selected, and calculating communication quality based on said demodulated signal, wherein in said step of selecting, while said first mode is selected, said first mode is maintained when communication quality is not higher than prescribed quality, and said second mode is selected when said communication quality is higher than the prescribed quality.